2/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0128603
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 1 G ALLOXAN IN 2N HCL WAS SLOWLY ADDED 3.5 G 1,2,4,5,C SUB6 H SUB2 (NH SUB2) SUB4 SULFATE IN 2N HCL AND THE MIXT. HEATED 0.5 HR TO GIVE 79.5PERCENT 7,8,DIAMINOALLOXAZINE (I), M. LARGER THAN 300DEGREES. THIS (0.1 G) AND 0.6 ML HCO SUB2 H IN 1.5 ML CONCD. HCL AND 3.5 ML H SUB2 O REFLUXED 2 HR AND ADJUSTED WITH NH SUB4 CH TO PH 6-7 GAVE 74PERCENT IMIDAZO(4,5,I)ALLOXAZINE, ISOLATED AS YELLOW HCL SALT, M. LARGER THAN 300CEGREES. I HEATED 6 HR WITH ACCL,ACOH OR AC SUB2 O,ACOH GAVE 68PERCENT 2,METHYLIMIDAZO(4,5,I)ALLOXAZINE (II), ISOLATED AS PERCHLORATE, M. LARGER THAN 300DEGREES, AS RED CRYSTALS; HCL SALT, AMORPHOUS BROWN SOLID. I AND NANO SUB2 IN AQ. HCL GAVE IN 24 HR 82.7PERCENT TRIAZOLE(4,5,I),ALLOXAZINE, M. LARGER THAN 300DEGREES. I IN ME SUB2 SO KEPT 3 HR WITH AC SUB2 O GAVE RED ORANGE 6,ACETAMIDO,7,AMINOALLOXAZINE. THE IMIDAZOALLOXAZINES GAVE YELLOW GREEN FLUORESCENCE IN UV LIGHT. HEUCKEL ANAL. OF ELECTRONIC DISTRIBUTION IN THESE COMPDS. WAS MADE AND PLOTS OF ELECTRON D. WERE SHOWN. THE RESULTS INDICATED THAT THE AMINO GROUP IN THE 7 POSITION IS MOST LIKELY TO BE ACYLATED FIRST IN I; THIS WAS CONFIRMED AS SHOWN ABOVE.
FACILITY: VSES. NAUCH. ISSLED. VITAMIN. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 627.73

SEVERDENKO, V. P., MAKUSHOK, Ye. M., and KLEBANOVICH, N. F.

"Stress-Deformation State in a Deposited Strip"

Minsk, Vestnik Akademii Nauk BSSR -- Seriya Fizika-Tekhnicheskikh Nauk, No 2, 1972, pp 5-9

Abstract: The article presents results of experiments conducted by the authors in the deposits of specimens made from materials with various types of rheological behavior, such as lead, colophony, and gelatin. The deformed state of the specimens was studied from coordinate grids overlaid on the surface of joints in the specimens splitting them into halves. The halves were then put together and compressed in a stamp with greased walls to reduce the friction. These tests allow one to compare the stress distribution and the deformations observed in optically sensitive materials and to equate the data obtained with the deformed coordinate grids. The authors are associated with the Physico-Technical Institute of the Belorussian Academy of Sciences.

1/1

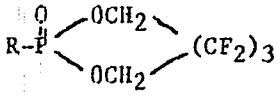
USSR UDC 541.64:542.952

SHAROV, V. N., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Polymers Based on Cyclic Polyfluoroalkylenealkyl(aryl)phosphonates"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 11, Nov 73, pp 2543-2457

Abstract: Cyclic hexafluoroamyleneheptafluoropropylphosphonate and hexafluoroamylenedimethylamidophosphate were synthesized. Hexafluoroamylenealkyl(aryl)phosphonates with radicals C_3H_7, C_6H_5, CH_3, and CH_2=CH as well as hexafluoroamylenedimethylamidophosphate polymerize thermally at 270° and catalytically at 220°. It was shown that the rate of thermal polymerization of cyclic monomers with the structure



increases with increased electronegativity of the radical R.

1/1

USSR

UDC 546.18:543.862.34

KOROL'KO, V. V., SHAROV, V. N., PRONS, V. N., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Molecular Refraction of the Cyclotriphosphazene Grouping P_3N_3"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 584-585

Abstract: A series of cyclotriphosphazenes with the general formula $(PN)_3Cl_x(OCH_2R^F)_{6-x}$, where $R^F = C_2F_5$, C_3F_7 and $x = 0$ to 6, has been synthesized and characterized. Molecular refraction of this grouping calculated by the formula $(MR_D)_G = (MR_D)_1 - (MR_D)_2$ is 25.23. $(MR_D)_1$ = molecular refraction from the formula of Lorentz-Lorenc, and $(MR_D)_2$ = molecular refraction of the substituents on cyclotriphosphazene.

1/1

USSR

UDC 546.185 + 547.412

PRONS, V. N., GRINBLAT, M. P., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Ammonolysis Reaction of Perfluoroalkylchlorophosphoranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, p 692

Abstract: Reaction of ammonia with bis(trifluoromethyl)trichlorophosphorane and bis(heptafluoropropyl)trichlorophosphorane in chloroform or methylene chloride at -40° - 0°, the reagents being taken in a ratio ≤3:1, followed by heating the intermediate products to 200-250° yields respective perfluoroalkylphosphazenes.

1/1

USSR

UDC 546.185+547.412

PRONS, V. N., GRINBLAT, M. P., KLEBANSKIY, A. L., NIKOLAYEV, G. A.

"Rearrangement of Fluoroalkoxyhalocyclophosphazenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, p 2128

Abstract: Heating a mixture of hexakis-(pentafluoropropoxy)-cyclotriphosphazene (I) and tris-(pentafluoropropoxy)-trichloro-cyclotriphosphazene (II) taken at a 1:1 ratio to 250° for 40 hrs in a sealed tube leads to the formation of 12% tetrakis-(pentafluoro-propoxy)-dichlorocyclotriphosphazene (III) and a trace of pentakis-(pentafluoropropoxy) monochlorocyclotriphosphazene (IV). Increasing the reaction time brings up the ratio of (III) and (IV) to about the level of (I) and (II). A similar disproportionation reaction occurs with hexakis-(heptafluorobutoxy)-cyclotriphosphazene and tris-(heptafluorobutoxy)-trichlorocyclotriphosphazene.

1/1

USSR

UDC 546.185+547.412

PRONS, V. N., GRINBLAT, M. P., KLEBANSKIY, A. L.

"Synthesis of Bis-(perfluoroalkyl)-cyclophosphazenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2127-2128

Abstract: Ammonolysis of bis-(heptafluoropropyl)-trichlorophosphorane (I) with a fivefold excess of highly dispersed ammonium chloride in chlorobenzene, prepared freshly in the reaction vessel from gaseous ammonia and HCl, occurs at 125-130° with slight decomposition of (I), yielding a 70-30 mixture of 2,2,4,4,6,6-hexa-(heptafluoropropyl)-cyclotriphosphazene and 2,2,4,4,6,6,8,8-octa-(heptafluoropropyl)-cyclotriphosphazene (II). Vacuum distillation of the above crystalline mixture gives pure (II), m.p. 122.5-123°; its IR spectrum shows bands at: 683, 740, 752, 880, 1120, 1142, 1200-1240, 1335, 1400-1420 cm-1.

1/1

USSR

UDC 547.26'118

PRONS, V. N., GRINBLAT, M. P., and KLEBANSKIY, A. L.

"Synthesis and Reactivity of Fluoroalkylchloro- and Fluoroalkylphosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, p 483

Abstract: Reaction of PCl_3 with tetrafluoropropanol, pentafluoropropanol and heptafluorobutanol gave low yields of bis-(tetrafluoropropyl) chlorophosphite, bis-(pentafluoropropyl) chlorophosphite, b.p. 67°/35mm d_4^{20} 1.5931, n_D^{20} 1.3370, and bis-(heptafluorobutyl) chlorophosphite, b.p. 35°/2 mm, d_4^{20} 1.6623, n_D^{20} 1.3312 respectively. In later runs the fluoroalcohol was added gradually to PCl_3 to increase the yield of secondary phosphites. However, even with small portions of the fluoroalcohol added, both the bis- and tris-(fluoroalkyl) phosphites were formed, the later by far in largest amounts.

1/1

USSR UDC 546.185 + 547.412

PRONS, V. N., GRINBLAT, M. P., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Synthesis and Polymerization of Methylchlorocyclophosphazenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 482-483

Abstract: Heating methyltetrachlorophosphorane with ammonium chloride in sym-tetrachloroethane yields methylchlorocyclophosphazenes in 58% yield, provided that ammonium chloride is prepared directly in the reaction vessel. The product consists of a 60:40 mixture of 1,3,5-trimethyl-1,3,5-trichlorocyclotriphosphazene and 1,3,5,7-tetramethyl-1,3,5,7-tetrachlorocyclotetraphosphazene. This mixture, heated to 200-220° for 15-20 hrs in a sealed ampoule, yields a rubber-like methylchloropolyphosphazene.

1/1

USSR UDC 546.185+547.241

SHAROV, V. N., KLEBANSKIY, A. L., BARTASHEV, V. A. (DECEASED), All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev, Leningrad, State Committee for Chemistry USSR

"Synthesis of Cyclic(Polyfluoro)alkylene(polyfluoro)alkylphosphates and (Polyfluoro)Alkylenealkyl(aryl)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2011-2014

Abstract: A solution 1,1-dihydrotrifluoroethanol in ether was added to phosphorus oxychloride in ether and allowed to stand overnight. The solids were they filtered off, the solvent evaporated and 1,1-dihydrotrifluoroethyldichlorophosphate was distilled. 1,1-Dihydropentafluoropropyl-, 1,1-dihydroheptafluorobutyl-, 1,1-dihydrononafluoroamyl-, 1,1-dihydro-3-(trifluoromethoxy)-tetrafluoropropyl- and 1,1,3-trihydrotetrafluoropropyldichlorophosphates were obtained analogously. To obtain 3,3,3-trifluoropropyldichlorophosphine (I), 3,3,3-trifluoropropylmagnesium chloride was first converted to the corresponding cadmium reagent and then 1/2

USSR

SHAROV, V. N., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2011-2014

reacted with phosphorus trichloride. The product (I) boiled at 120-122°, d_4^{20} 1.4514, n_D^{20} 1.4290; it was converted to the 3,3,3-trifluoropropyldichlorophosphonate by treatment with chlorine followed by SO_2. The synthesis of 1,1,5,5-tetrahydrohexafluoroamylenechlorophosphate consisted of reacting phosphorus oxychloride with 1,1,5,5-tetrahydroxyfluoroamylene glycol and triethylamine. The additions were carried out in cold ether and the reaction mixture was allowed to come to room temperature and stand overnight. The solution was cooled again and treated with gaseous HCl. The precipitate was filtered and washed with ether and the product was vacuum-distilled. 1,1,5,5-Tetrahydrohexafluoroamylene-1,1-dihydrotrifluoroethylphosphate -pentafluoropropylphosphate, -heptafluorobutylphosphate, nonafluoroamylphosphate and -3-(trifluoromethoxy)-tetrafluoropropylphosphate were obtained analogously. Physical properties of the products are tabulated in the article.

2/2

USSR

UDC 678.74.074

KLEBANSKIY, A. L., and YUZHELEVSKIY, Yu. A., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"The Work of the All Union Scientific Research Institute of Synthetic Rubber in the Field of the Synthesis of Siloxane Rubbers"

Moscow, Kauchuk i Rezina, No 2, 1971, pp 22-24

Abstract: The article describes the work done by the All Union Scientific Research Institute of Synthetic Rubber on the synthesis of siloxane rubbers and the study of their properties. Among those taking part in the work were A. L. KLEBANSKIY, V. S. FIKHTENGOL'TS, I. K. STAVITSKIY, E. V. KOGAN, A. V. KARLIN, S. N. BORISOV, L. A. MITROFANOV, V. N. GRUBER, B. I. PANCHENKO, V. M. TROFIMOV, T. F. ROGOZINA, T. V. KUKLOVA, A. I. PONOMAREV, Yu. A. LARIONOVA, Ye. B. DMOKHOVSKAYA, I. Ya. PODDUBNYY, S. V. AVER'YANOV, L. A. AVER'YANOVA. At the present time researchers are directing their efforts towards improvements in existing methods for the synthesis of polymers and intermediates, the development and testing of new catalytic systems for the polymerization of cyclosiloxanes and the polycondensation of silane- or siloxanediols, and the creation of new types of siloxane rubbers.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS AND THERMAL STABILITY OF PHOSPHAZOPHOSPHINES -U-

AUTHOR-(03)-PRONS, V.N., GRINBLAT, M.P., KLEBANSKIY, A.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 589-94

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, THERMAL STABILITY, POLYMER, ORGANIC PHOSPHORUS COMPOUND, AZO COMPOUND, PHOSPHORUS CHLORIDE, FLUORINATED ORGANIC COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1136 STEP NO--UR/0079/70/040/003/0589/0594

CIRC ACCESSION NO--AP0126562
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128562

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 20 G (CF SUB3) SUB2 PNH SUB2 AND 22 G ET SUB3 N AT NEGATIVE 40DEGREES TO 30.61 G (CF SUB3) SUB2 PCL SUB3 IN ET SUB2 O UNDER GAVE ON THE FOLLOWING 95PERCENT ET SUB3 N,HCL AND 62.2PERCENT (CF SUB3) SUB2 PCL, B. 21-1.5DEGREES, WHILE THE DISTN. RESIDUE IS SHOWN ON MICROFICHE. FACILITY: VSES. NAUCH. ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PURIFICATION OF ORGANOCHLOROSILANES -U-

AUTHOR-(05)-KLEBANSKIY, A.L., GRUBER, V.N., KRUGLOVA, G.A., KARLIN, A.V., LOSKOV, V.D.
COUNTRY OF INFO--USSR

SOURCE--USSR 265,884
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--17MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ORGANIC SILANE, CHLORINATION, DISTILLATION, CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1480 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128879
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128879

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. ARE PURIFIED BY CHLORINATION WITH THE AID OF UNSATD. ORGANOCHLOROSILANES, E. G. METHYLVINYLDICHLOROSILANE, FOLLOWED BY FRACTIONAL DISTN. OF THE FINAL PRODUCT. THE STILL RESIDUES FROM THE FRACTIONAL DISTN. OF METHYLVINYLDICHLOROSILANE (CONTG. VINYL GROUPS) CAN BE USED AS THE CHLORINATING AGENT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330009-1"

1/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--OXIDATION OF NIOBIUM THIN FILMS AT LOW TEMPERATURES -U-

AUTHOR--KLECHKOVSKAYA, V.V.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 358-61

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--METAL OXIDATION, NIOBIUM, METAL FILM, LOW TEMPERATURE EFFECT, TANTALUM, OXYGEN, CATHODE SPUTTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0902 STEP NO--UR/0070/70/015/002/0358/0361

CIRC ACCESSION NO--AP0116412

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0116412
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FILMS OF NB WERE SPUTTERED ON COLD AND HOT NACL CRYSTALS. IMMEDIATELY AFTER SPUTTERING AT 10 PRIME NEGATIVE5-10 PRIME NEGATIVE6 MM HG, BCC. A EQUALS 3.35, OR FCC. MATERIAL, A EQUALS 4.39 ANGSTROM, WAS OBTAINED. ANNEALING CHANGED THE BCC. PHASE INTO THE FCC. PHASE. ANNEALING THE FCC. PHASE AT 300-350DEGREES FORMED THE CUBIC PHASE, A EQUALS 3.88. ANNEALING AT 500-550DEGREES DID NOT CHANGE THE FCC. PHASE, BUT A INCREASED TO 4.42-4.44 ANGSTROM. PHASES WITH A EQUALS 4.44 AND 3.88 ANGSTROM WERE APPARENTLY INTERMEDIATE PHASES. THE PROCESS OF OXIDN. WAS ASCRIBED TO DEFECTS IN THE OXIDE PHASE, A EQUALS 4.4 ANGSTROM, OR THE 2 SUBLATTICE PHASES, A EQUALS 3.88 ANGSTROM. THIS IS SIMILAR TO THE TA-O SYSTEM DESCRIBED BY KLECHKOVSKAYA, ET AL., 1968. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--QUANTITATIVE ESTIMATION OF THE PRIME90 SR INTAKE BY PLANTS FROM THE SOIL AND ITS ACCUMULATION IN CROPS -U-

AUTHOR-(03)-ARKHIPOV, N.P., YEGOROV, A.V., KLECHKOVSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--AEC-TR-7128, PP 143-51

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, AGRICULTURE

TOPIC TAGS--STRONTIUM ISOTOPE, SOIL CHEMISTRY, AGRICULTURAL CROP YIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1781 STEP NO--UR/0000/70/000/000/0143/0151

CIRC ACCESSION NO--AT0054619

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0054619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR STUDIES ON PRIME90 SR UPTAKE PLANTS, 112 EXPERIMENTAL PLOTS WERE SUBDIVIDED INTO EIGHT SERIES OF 14 PLOTS EACH; PROPERTIES OF THE SOIL IN EACH SERIES WERE APPROXIMATELY IDENTICAL. STRONTIUM 90 WAS ADDED TO THE PLOTS IN AMOUNTS VARYING FROM ONE TO 110 MICROCURIES PER SQ M. THE FOLLOWING PLANTS WERE CULTIVATED FOR SEVEN YEARS IN THE EXPERIMENTAL PLOTS: WINTER RYE, SPRING WHEAT OATS, VETCH, LUCERNE, CLOVER, POTATOES, AND CORN. TABLES ARE PRESENTED TO SHOW CORRELATION COEFFICIENTS BETWEEN PRIME90 SR CONTENT OF THE SOIL AND OF THE CROP HARVEST. RESULTS SHOWED THAT THERE WAS A CLOSE CORRELATION BETWEEN THE PRIME90 SR CONTENT OF THE SOIL AND THAT OF THE CROP PLANTS. FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 620.17:539.562:669.7

BANNYKH, O. A., BUSALOV, YU. YE., KLEKOVKIN, A. A., KOP'YEV, I. M., and PROKOF'YEV, D. I., Institute of Metallurgy imeni A. A. Baykov

"High-Strength Wires for Reinforcement of Light Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1973, pp 40-45

Abstract: A study was made of the mechanical properties, depending on tempering temperature and time, of high-strength wires from steels of industrial melts: U8A carbon steel (1), VNS9(2Kh15N5AM3) austenitic martensite steel (2), MS200(N18K9M5T) martensite-aging steel (3), EP322(OKh14N14M1) austenite steel (4), and an aging alloy based on Fe-Co-Ni-Cr (40KNKhMVTYu) (5). X-ray structural analysis revealed that the loss of strength of the wire at increasing tempering tempreature is generally determined by processes of recovery in cold-deformed martensite, the development of $\alpha(M) \rightarrow \gamma$ transformation, and also by coagulation of particles of excess phases. Wires of steel (1) weakened at temperatures $> 300^{\circ}C$, of steels (2), (3), and (4) - at temperatures $> 500^{\circ}C$, and of (5) - at tempetatures $> 650^{\circ}C$. The selection of the technology for producing a light alloy-wire composite depends on the loss-of-strength temperature of the wire. A liquid-phase technology can be applied in strengthening with

1/2

USSR

BANNYKH, O. A., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1973, pp 40-45

fibers of alloy (5). In strengthening wires of alloy steels (2), (3), and (4), only solid-phase methods with heating $\leqslant 500^{\circ}C$ can be applied, and only short-duration heating $< 300^{\circ}C$ can be applied for composites strengtened by steel (1) wires. Three figures, two tables.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE STUDY OF PRIMARY PYELONEPHRITIS IN CHILDREN -U-

AUTHOR-(05)-MATVEYEV, M.P., IGNATOVA, M.S., KLEMBOVSKIY, A.I., KOROVINA, N.A., TEVOSYAN, V.K.

COUNTRY OF INFO--USSR

SOURCE--PEDIATRIYA 49(2): 34-40. ILLUS. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GENITOURINARY SYSTEM DISEASE, KIDNEY, NEPHRITIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605006/E12 STEP NO--UR/0546/70/049/002/0034/0040

CIRC ACCESSION NO--AT0139810

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0139810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF PYELONEPHRITIS HAS BECOME ONE OF THE PRINCIPLE ONES IN NEPHROLOGY. CLINICAL, LABORATORY, ROENTGENOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF 50 CHILDREN WITH AN INFECTIOUS PROCESS IN THE URINARY SYSTEM WERE GIVEN. THE INVESTIGATIONS CONDUCTED MADE IT POSSIBLE TO SINGLE OUT 3 GROUPS OF CHILDREN: THE FIRST GROUP INCLUDED CHILDREN (12) WITH DISTINCT CLINICAL AND ROENTGENOLOGICAL SIGNS OF PYELONEPHRITIS, THE SECOND GROUP INCLUDED CHILDREN (12) WITHOUT ROENTGENOLOGICAL SIGNS OF PYELONEPHRITIS AND MINIMUM BIOCHEMICAL SHIFTS OF THE BLOOD, WHO WERE REGARDED AS PATIENTS WITH AN INFECTION OF THE URINARY SYSTEM. CHILDREN OF THE THIRD GROUP (26), IN WHOM IN SPITE OF THE NORMAL X RAY PICTURE OF THE KIDNEYS ALONGSIDE PROTEINURIA, LEUKOCYTURIA AND BACTERIURIA MARKED SHIFTS OF PROTEIN, LIPID AND MUCOID METABOLISM, A TENDENCY TOWARDS THE TUBULAR FUNCTION WERE OBSERVED, COULD BE REGARDED AS PATIENTS WITH THE INITIAL PYELONEPHROTIC AFFECTION OF THE KIDNEYS. FACILITY: DEP. PEDIAT., CENT. INST. POSTGRAD, MED., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 51:155:001:57:681:3:06

MEYSON, S., KLEMENS, J.

"Recognition of Letters in an Experimental Reading Machine for the Blind"

V sb. Raspoznavaniye obrazov (Pattern Recognition -- collection of works), Moscow, "Mir," 1970, pp 198-211, (from RZh-Kibernetika, No 12, 1970, Abstract No 12 V 619)

[No abstract given]

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--WIDE BAND REFLECTORS BASED ON MULTILAYER DIELECTRIC COATINGS -U-

AUTHOR-(04)-KOROLEV, F.A., KLEMENTEVA, A.YU., MESHCHERYAKA, T.F., RAMAZINA, I.A.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 775-80

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DIELECTRIC COATING, LIGHT REFLECTION, WIDEBAND TRANSMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0954 STEP NO--UR/0051/70/028/004/0775/0780

CIRC ACCESSION NO--AP0121556

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0121556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODS OF PREPN. OF VARIOUS WIDEBAND REFLECTORS AS WELL AS EXPTL. RESULTS IN THE VISIBLE AND UV SPECTRAL REGIONS ARE GIVEN.

UNCLASSIFIED

USSR UDC: 538.4

KLEMENTOV, A. D., MIKHAYLOV, G. V., NIKOLAYEV, F. A., ROZANOV, V. B., SVIRIDENKO, Yu. P.

"High-Current Pulse Discharge in Lithium"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low--Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 269-275 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B52)

Translation: The authors report on a study of a high-power pulse source of light produced by an electric discharge in a lithium plasma as the working medium. A cylindrical chamber with quartz walls was used with an inside diameter of approximately 90 mm, the distance between the steel hemispherical electrodes being 145 mm. The chamber was evacuated to a pressure of 10^{-5} mm Hg. The lithium wire was 0.1 mm in diameter. The discharge developed in lithium vapor formed by an electric explosion. The discharge was fed from two condenser banks -- a main bank and an auxiliary bank with energy capacities of 22 and 4.5 kJ respectively. The pulse from the auxialiary bank was delayed by 25 μs relative to the beginning of

USSR

KLEMENTOV, A. D., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

the discharge from the main bank. The duration of the first half-cycle of the current discharge from the main bank was 75 μs with a corresponding figure of 15 μs for the auxiliary bank. The current and voltage of the discharge were determined by a Rogowski loop and a voltage divider. The dynamic process of development of the discharge filament was recorded by the SFR instrument operating in the single-frame mode at a rate of 10^6 frames per second. Emission from the central zone of the discharge was registered by a spectrograph with time scanning and in the integrated exposure mode.

It was found that the discharge develops only in the exploding wire vapors. The discharge filament expanded at a nearly constant rate of approximately 1.3 km/s, reaching the walls of the chamber about 50 μs after beginning of the current pulse. Brightness distribution through the discharge filament is nonuniform,, which is due to localized non-uniformities of density and temperature. Discharge emission consists of an intense continuous spectrum which carries the main part of the energy, and superimposed complex line emission, which is analyzed. It is found that maximum brightness temperature in the 250 nm region is 17,000°K. Emission during the second half-cycle of the current is considerably weaker -- the

2/3

USSR

KLEMENTOV, A. D. et al., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozanov.

USSR

KLEMENT'YEV, A. A., MASLOV, Ye. P., PETROVSKIY, A. M., YASHIN, A. I.

"Control of Stochastic Processes with Adjustable Duration of the Test Interval"

Tr. IV Vses. Soveshch. po Avtomat. upr., 1968. Teoriya Avtomat. upr. [Works of Fourth All-Union Conference on Automatic Control, 1968. The Theory of Automatic Control], Moscow, Nauka Press, 1972, pp 226-236, Discussion 256-262 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V282 by the authors).

Translation: The problem is solved of synthesis of an optimal testing and control algorithm for a discrete random process with incomplete information. Three types of losses are defined: to deviation of the controlled process $\{\eta_n\}$ from the assigned mode $\{\theta_n\}$; to control of the process $\{\eta_n\}$; to testing of the process $\{\eta_n\}$. Suppose the number of cycles of existence of process $\{\eta_n\}$ is finite and equal to N. As a result of the operations of testing and control, and also the mismatch in coordinate y and θ_n, n = 1, 2, ..., N, summary random losses C arise. The mathematical expectation of the value of C is minimized by selecting the 1/2

USSR

KLEMENT'YEV, A. A., MASLOV, Ye. P., et. al., Tr. IV Vses. Soveshch. po Avtomat. upr., 1968. Teoriya Avtomat. upr., Moscow, Nauka Press, 1972, pp 226-236, Discussion 256-262.

number and placement of moments of testing and control, and also by selecting control u_k, k = 1, 2, ... The problem is solved by methods of dynamic programming.

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON PROCESS OPTIMAL CONTROL UNDER RANDOM TIME OF ITS COMPLETION -U-

AUTHOR--KLEMENTYEV, A.A.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 6, PP 48-56

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--RANDOM PROCESS, TIME OPTIMAL CONTROL, ALGORITHM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1020 STEP NO--UR/0103/70/000/006/0048/0056

CIRC ACCESSION NO--AP0124679

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124679

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS CONSIDERED THE PROBLEM OF CONTROLLING A RANDOM PROCESS THE TIME OF THE EXISTENCE OF WHICH IS NOT KNOWN EXACTLY. THERE IS STATED THE PROCEDURE OF DETERMINING THE OPTIMAL ALGORITHM OF THE CONTROL OF THIS PROCESS WITH TAKING INTO ACCOUNT THE POSSIBLE LOSSES ON OBSERVATION, THE LOSSES FOR CONTROL AND THE LOSSES CONNECTED WITH THE DEVIATION OF THE CONTROLLED PROCESS FROM THE STANDARD ONE.

UNCLASSIFIED

USSR UDC 518:517.944/.947

KLEMENT'YEV, A. F.

"Unstable Implicit Difference Schemes for the Diffusion Equation"

Minsk, Vopr. teorii teplo- i massoobmena -- Sbornik (Problems of the theory of Heat and Mass Transfer -- Collection of Works), 1970, pp 206-212 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B956, by I. Shelikhova)

Translation: Among practicing computer experts, the view is held that the use of implicit difference schemes insures the stability of the computational process. Three examples of absolutely unstable implicit difference schemes are considered for the numerical solution of the diffusion equation. Calculation results are set forth.

1/1

KLEMENT'YEV, A.M.

Radio engr

SO: JPRS 5043
01 June 1960

Radio Engineering

TRIPLE CENTERLESS RING BALANCED MODULATOR

Yu. A. Ostroumov, A. M. Klement'yev, Engineers

Ring balanced modulators permit single-band modulation of the carrier which can be used in phase direction finders or in other systems for the common amplification channel by means of which the differential phase shift discussed in reference [1] decreases.

The ring balanced modulator (RBM) contains two balanced modulators (BM) which were investigated in reference [2], and they differ only in the corresponding phasing of the BM components of the spectrum of the modulated signal-Inter output.

In figure 1,a is the block diagram of the RBM. The oscillator voltage $U_1 \cos \omega t$ - 90° out of phase is fed to the first BM, and the auxiliary oscillator voltage $U_2 \cos \Omega t$ is fed to the same modulator. The oscillator voltage $U_1 \cos \omega t$ is fed without a phase shift to the second BM, and the $U_2 \cos \Omega t$ voltage - 90° out of phase.

The voltages at the output of the first and second BM will be respectively:

$$U_1 \cos\left(\omega t - \frac{\pi}{2}\right) U_2 \cos\left(\Omega t - \frac{\pi}{2}\right) = \frac{1}{2} U_1 U_2 \left[\cos(\omega t - \Omega t) + \cos(\omega t + \Omega t)\right]$$

$$U_1 \cos \omega t \, U_2 \cos\left(\Omega t - \frac{\pi}{2}\right) = \frac{1}{2} U_1 U_2 \left[\sin(\omega t - \Omega t) + \sin(\omega t + \Omega t)\right]$$

The output voltage of the RBM is proportional to the sum of the voltages from the first and second BM, that is,

$$U = kU_1 U_2 \cos \Omega t.$$

Structurally, the BM are assembled from double wave guide T-bridges (figure 1,b) in the lateral arms of which are attenuators, connected with high-frequency diodes and tuning plungers.

USSR UDC: 621.385.632.001.5

ALGAZINOV, E. K., KLEMENT'YEV, F. M., KITAYEV, Yu. I.

"Analysis of Singularities of the Nonlinear Mode of a Traveling-Wave Tube When a Multiple-Frequency Signal is Amplified"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1028-1032

Abstract: The method of successive approximations is used to analyze the combination components which arise at the output of a traveling-wave tube when several signals are simultaneously amplified. Simple analytical expressions are found for the case of small frequency differences. The dispersion properties of the system were disregarded, thus limiting the maximum possible frequency spacing between input signals. The results of the analysis are compared with the results of a stricter theory and with experimental data. It is found that the proposed method can yield formulas analogous to those derived when dispersion properties are taken into consideration.

1/1

USSR UDC: 621.391.8:591.27

KLEMENT'YEV, F. M., RUDENKO, B. D.

"On Optimizing Measurement of the Distribution Functions of Random Processes"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 44-45 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A57)

Translation: In solving the problem of optimizing measurements of the distribution functions of random processes, the test for errors must be properly selected. A criterion which satisfies these requirements is the area between the curve for the density distribution which is being sought, and the histogram of the process; this area depends on the values of the quantum levels as parameters, and therefore a study of the extremum will make it possible to find an optimum rule for quantization. In the general case, realization of such a system is complex, but the problem may be simplified by introducing certain limitations on the selection of quantizing levels. N. S.

1/1

USSR UDC: 621.317.335.3.029.64

YEPIFANTSEV, Yu. F., ZHUKOV, O. K., KLEMENT'YEV, F. M., KULIKOV, V. M., LIBERMAN, Z. A., OGURTSOV, S. I.

"Measurement of the Permittivity of $(Ba,Zn)TiO_3$ Ceramic in the 3-cm Microwave Band, and Evaluation of the Effect Which Destabilizing Factors Have on Measurement Accuracy"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 92-94 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A357)

Translation: The authors investigate the dispersion of permittivity of type $(Ba_{1-x}Zn_x)TiO_3$ ferroelectric crystals in the 3-cm frequency band using a measurement installation whose block diagram is given. Permittivity is calculated from the results of measurement of the microwave signal amplitude and phase determined when specimens of various thicknesses are introduced into the feedback circuit. The results of measurements made on three frequencies (8,900, 10,000 and 10,800 MHz) are presented for four types with

USSR

YEPIFANTSEV, Yu. F., et al., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1, 1970, pp 92-94

various values of x. The results show that barium titanate ceramic with 4 percent zinc has the least dispersion. The effect which destabilizing factors have on measurement precision is examined. Three illustrations. E. L.

2/2

USSR

UDC 621.373.535 (206.3)

BAGAYEV, S. N., VASILENKO, L. S., MATYUGIN, YU. A., KLEMENT'YEV, V. M., TROSHIN, B. I., and CHEBOTAYEV, V. P.

"Some Results of a Study of the Generation Frequency Stability of Gas Lasers on the 0.63, 1.5, 3.39, and 9.6 Micron Wavelengths"

Leningrad, Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 802-808

Abstract: The article gives a brief description of the principal results of the authors' study of the frequency stabilization of gas lasers on the 0.63, 1.5, 3.39, and 9.6-micron wavelengths. Various frequency stabilization methods were used: viz., a stabilization method based on the Lamb dip, stabilization methods according to the peak in the output radiation power (a laser with an internal absorption cell) and with an external gas absorption cell in a variable magnetic field. The main purpose of this work was to show that high frequency stability values can be attained in various lasers by various methods. The experimental setup and the measurement procedures used by the authors, as well as the research results will be described in separate

USSR

BAGAYEV, S. N., et al., Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 802-808

articles. The main emphasis was placed on the physical principles of the stabilization methods used and the results attained. All the principal results are shown in a table which, besides generation-frequency-stability measurement data, also gives parameters which characterize the physicotechnical properties of an optical frequency discriminator.

2/2

USSR UDC 669.18-412:621.746.753

KLEMESHOV, G. A., DOROKHOV, V. I., PALYANICHKA, V. A., and LITVINOVA, V. I.
(Ukrainian Scientific Research Institute of Metals)

"Rational Method of Deoxidizing Silicon Manganese Steel for the Production of Thick Slabs"

Moscow, Stal', No 9, Sep 72, pp 798-801

Abstract: The effect of preliminary and final reduction of 09G2S silicon-manganese steel (GOST 5520-69) on the process kinetics of the formation and removal of non-metallic impurities and on the variation of residual concentrations of deoxidizing elements (Al, Mn, Si, Ti) during casting and crystallization of 9-m slabs is considered. The investigation was carried out on four smeltings produced in 135-m open-hearth furnaces with silicon-manganese domes at the Zhdanov Metallurgical Plant. Preliminary reduction in the furnace by manganese-silicon was shown to be more effective than introducing it into the ladle together with ferrosilicon, aluminum, and ferrotitanium. A further advantage is that there is less contamination of the metal with oxide impurities and there is a more uniform distribution between the upper and bottom slab sections. The residual Al content increased from thousandths of a percent to 0.016-0.020% (about 5 to 6 times) and slab rejection due to unsatisfactory indexes of impact strength at low temperatures is practically eliminated.
1/1

Foundry

USSR UDC 669.18:621.746.58

DOROKHOV, V. I., PALYANICHKA, V. A., KLEMESHOV, G. A., YEVTYUTOV, V. P., GLAZOV, V. I., PANASENKO, V. G., RYABININ, B. G., and ROSTORGUYEV, V. D., Ukrainian Scientific Research Institute of Metals

"Casting of Large Sheet Ingots of Low-Alloy Steel Under Protective Slag Coating"

Moscow, Metallurg, No 3, Mar 72, pp 17-19

Abstract: Joint investigations of the Ukrainian Scientific Research Institute of Metals and the Zhdanov Plant imeni Il'ich, revealed that stratifications in sheets of silicomanganous steel can be caused by accumulations of macro-inclusions of endogenic origin or increased content of hydrogen. Experiments in casting sheet ingots of silicomanganous steel 09G2S, weighing 118-27.0 tons, under a protective coating of synthetic slag, are described. The experiments were conducted in order to decrease stratifications resulting from nonmetallic impurities. It was found that by using slag with optimum physico-chemical properties in casting steel, the content of oxide inclusions can be lowered by more than 30% and stratifications can be practically eliminated in thick sheets. The nonmetallic inclusions do not change

USSR

DOROKHOV, V. I., et al., Metallurg, No 3, Mar 72, pp 17-19

character, but are merely redistributed, and a refining of metal from oxides, particularly from alumina, takes place. One illustration, two tables.

AA0101376 KLEMIN B.N. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

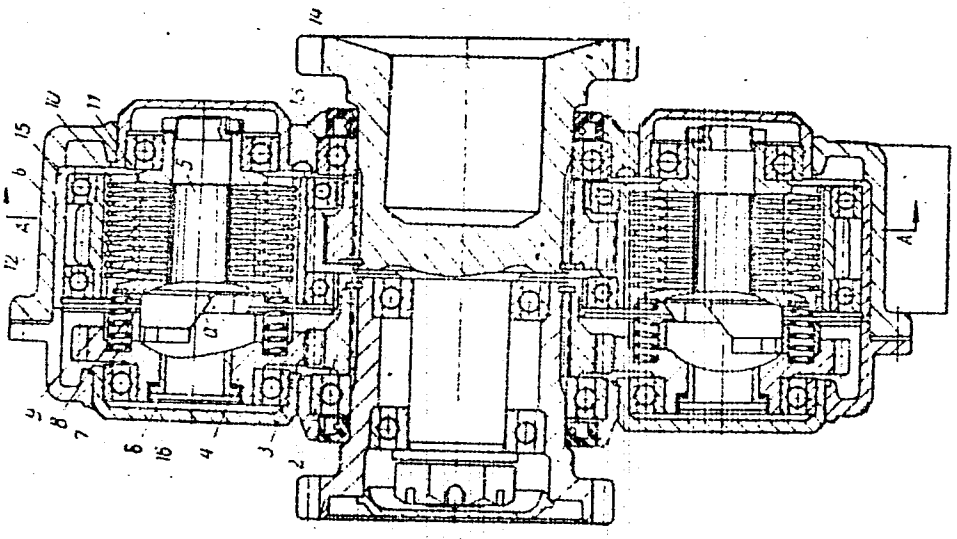
1 238304 FRICTIONAL MULTI-DISC PLANETARY TWO-ROW SPEED CHANGER containing sets of friction-bevelled pairs of discs 9 and 10 with internal contact which differs, in order to provide greater efficiency, simpler gear-ratio control and greater range, in having the planet wheels in the form of gears with the first row 3 on shafts 5 carrying the small diameter discs and the second row 12 made hollow to contain the large diameter discs. For control of the gear ratio the hollow planet wheels 12 are set in a rotating ring 15 that is coaxial with housing 6, so that the ratio can be changed by turning ring 15 in relation to housing 6. 26.2.65. as 945823/25-28. N.A ASTROV et al. Car and Engine Res. Inst. and Mitishchi Machine Blog Works. (3.7.69.) Bul.9/20.2.69. Class 47h. Int.Cl. F06h.

18

1/3

19851213

AAU101370



2/3

19851214

AA0101376

AUTHORS: Astrov, N. A.; Yerokin, V. V.; Klemin, A. N.; Leonov, V. I.; Petrushov, V. A.; Speranskiy, N. G.; Strigin, I. A.

Tsentral'nyy Nauchno-Issledovatel'skiy Avtomobil'nyy i Avtomotornyy Institut i Mytishchinskiy Mashinostroitel'nyy Zavod

3/3

19851215

1/2 017 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--THE INFLUENCE OF ACTIVATED HAGEMAN'S FACTOR ON THE BLOOD COAGULATION SYSTEM IN VIVO -U-

AUTHOR-(02)-ASHKINAZI, I.YA., KLEMINA, I.K.

COUNTRY OF INFO--USSR

SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 4, PP 32-36

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD COAGULATION, RABBIT, BLOOD PLASMA, PROTHROMBIN, FIBRINOLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1594 STEP NO--UR/0219/70/069/004/0032/0036

CIRC ACCESSION NO--AP0106340

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS STAGED ON RABBITS THE AUTHORS UNDERTOOK IN VIVO STUDIES OF THE BLOOD COAGULATION SYSTEM IN DIATOMITE ACTIVATION OF HAGEMAN'S FACTOR, AS WELL AS IN THE ADMINISTRATION OF ACTIVATED PLASMA. UNDER THE INFLUENCE OF THE REFERRED TO EFFECTS THERE WERE OBSERVED A MARKED ACCELERATION OF COAGULATION OF "SILICONE" BLOOD (PLASMA), A SHORTENING OF RAND K INTERVALS OF THE THROMBOELASTOGRAM OF RECALCIFIED PLASMA WITH INCREASE OF THE ALPHA ANGLE, INTENSIFICATION OF PROTHROMBIN UTILIZATION. HYPERCOAGULATION WAS MORE REGULAR IN DIATOMITE ADMINISTRATION AND WAS ATTENDED IN A NUMBER OF EXPERIMENTS BY THE DEVELOPMENT OF A MODERATELY MARKED COAGULOPATHIA OF UTILIZATION (REDUCTION OF THE BLOOD CONTENT OF I, V, VIII FACTORS). NOTWITHSTANDING THE APPEARANCE IN THE CIRCULATION OF ACTIVATED HAGEMAN'S FACTOR, NO REGULAR INTENSIFICATION OF FIBRINOLYSIS WAS OBSERVED, THIS TESTIFYING TO RE EVALUATION OF THE ROLE OF THIS FACTOR IN THE MECHANISM OF FIBRINOLYSIS INTENSIFICATION IN VIVO.

UNCLASSIFIED

USSR

UDC 616-056.3(082)

GORIZONTOV, P. D., and KLEMPARSKAYA, N. N., Moscow

"Variation in Reactivity of an Irradiated Organism"

Moscow, Problemy Immunologicheskoy Reaktivnosti i Allergii (Problems of Immunological Reactivity and Allergy), Moscow, "Meditsina," 1971, pp 19-29

Abstract: A study was made of the change in allergic reactivity and the induction of autoallergic processes as a result of ionizing radiation. A survey of the work in this field including research procedures and results is presented. Two different procedural paths are considered: 1) the discovery and description of certain changes in the structure and function of individual organs and systems and 2) evaluation of the integral index of reactivity of the organism as a whole, that is, the adequacy of coordinated functioning of all its systems. Graphs are presented showing the effect of homosensitization on the survival rate of irradiated mice, the increase in the death rate of irradiated mice under the effect of subcutaneous injection of 0.5 ml of 25% spleen extract 5 hours after irradiation, leukocyte damage in a rabbit irradiated with 600 roentgens 30 days after irradiation on contact with homologous tissue antigen, the dynamics of appearance of autoantibodies in irradiated (600 roentgens) and sensitized rabbits (fivefold intra-abdominal injection of 10 ml of a mixture

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330009-1"

USSR

GORIZONTOV, P. D., and KLEMPARSKAYA, N. N., Problemy Immunologicheskoy Reaktivnosti i Allergii, Moscow, "Meditsina," 1971, pp 19-29

of equal parts of 10% homogenate of homologous tissue of the liver, kidneys and intestine), and the titration dynamics of autoantibodies in rabbits after irradiation with 800 roentgens for DNA and renal antigen and for the renal antigen of dogs after repeated irradiation with a lethal dose of 360 roentgens. Experimental results are analyzed and the mechanisms discussed.

2/2

USSR

UDC 612.017.12:612.461.269.014.482

RUBACHEV, I. G., STREL'NIKOV, V. A., FEDOROVA, T. A., KLEMPARSKAYA, N. N., DUKHOVNAYA, E. M., and FURAYEVA, L. P.

"The Effects of Irradiation on the Urinary Excretion of Thymidine and Beta-Aminoisobutyric Acid in Immunized Rats"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

Translation: Whole-body irradiation of animals induces massive decomposition of desoxynucleoproteins and liberation and depolymerization of DNA in the cells of organs sensitive to irradiation. At the same time, there is an increased urinary excretion of desoxynucleosides -- desoxycytidine and thymidine, and of the products of thymidine catabolism -- beta-aminoisobutyric acid. A study of the dynamics of the excretion of these substances makes it possible to elucidate the nature of DNA metabolism in the body during the 1st day after irradiation and, during the subsequent period, the nature of restoration processes taking place in the rapidly regenerating tissues.

In a previous study, we established that after active immunization, rats have an increased urinary excretion of beta-aminoisobutyric acid, especially during

USSR

RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

the period of maximum concentration of agglutinins in peripheral blood, and a decreased concentration of plasmocytes in the lymph nodes. In this investigation, we studied the level of DNA decomposition (based on the urinary excretion of thymidine and beta-aminoisobutyric acid) and the dynamics of the formation of antibodies (according to the titers of agglutinins) in vaccinated and irradiated rats. The animals received a single dose of whole-body irradiation (500 r) from the EEGO-2 generator (power, 640 r/min; gamma rays, Co^{60}) 48 hours prior to and 48 hours after vaccination. Immunization was performed with Breslau bacilli killed with heat, which were administered intramuscularly in a dose of 1 billion microbial cells in 0.5 ml. Irradiation prior to and after immunization equally suppressed the formation of agglutinins (approximately three times). During the 1st day after irradiation, the level of thymidine excretion in controls, and immunized animals also increased to an equal degree (5 and 2.5-3 times, respectively). This fact and the equivalent degree of inhibition of antibody formation indicated that immunization performed 48 hours prior to irradiation exerted no protective effects on the

2/3

USSR

RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

decomposition of lymphoid tissue during the 1st day after irradiation or on its ability to produce antibodies. Subsequently, the level of thymidine excretion by control animals and those of the experimental group differed considerably from the standpoint of excretion of beta-aminoisobutyric acid (these differences were insignificant). During the subsequent period (up to 11 days), irradiated control animals displayed a considerable decrease (3-5 times) in thymidine excretion as compared to the initial level. Normal or above-normal thymidine excretion was observed on the 7th-11th days after immunization in animals immunized after irradiation, and on the 2nd-6th days after irradiation or on the 4th-8th days after immunization in animals immunized prior to irradiation. This development may be associated with regenerative processes which apparently begin earlier and proceed at a more rapid rate.

3/3

USSR

UDC 681.2.001.12:621--039.84

KLEMPNER, K. S. and CHEREDNICHENKO, I. M.

"Optimal Relationships During Calculation of the Error of Radioisotope Instruments"

Moscow, Izmeritel'naya Tekhnika, No 5, May 1973, pp 71-73

Abstract: In the designing of radioisotope instruments, in a number of cases optimal relationships exist among the parameters of the functional scheme, at which the measurement error is minimal. Depending upon the rate of change of the measured value x, consideration may be given to two cases: 1) the given measurement error, divided by the rate of change of x, is much smaller than the response speed of the instrument; 2) the given measurement error, divided by the rate of change of x, is equal to or greater than the response speed of the instrument. In the first case the dynamic characteristics of the object of control do not bring about a supplementary error during the measurement of x; this corresponds to a quasi-steady measured value. In the second case the total measurement error is the sum of the static measurement error and a dynamic measurement error. In accordance with this there can be either a minimum of error on the basis of the sensitivity of the measurement instrument, or a minimum on the basis of the time constant of the instrument during the measuring of rapidly changing values.

1/2

USSR

KLEMPNER, K. S. and CHEREDNICHENKO, I. M., Izmeritel'naya Tekhnika, No 5, May 1973, pp 71-73

An investigation is made of conditions of the minimum of error in the measurement of values connected with a nuclear radiation flux, with account taken of all forms of error originating in a functional system of measurement. An analysis is made of the influence of individual error components upon the conditions of existence of the minimum. It is shown that the basic relationships used in engineering methods of calculation are partial in nature, and are obtained as limit estimates in the cited expressions. Calculation relationships are given, which link the optimal conditions of measurement for cases encountered in designing practice. 3 figures. 7 references.

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ORBIT PARAMETERS OF THE 2 METER JINR ISOCHRONOUS CYCLOTRON -U-

AUTHOR-(03)-SHELAYEV, I.A., KOZLOV, S.I., KLENIN, B.A.

COUNTRY OF INFO--USSR

SOURCE--JINR P9 5033 LAB. OF NUCLEAR REACTIONS. 1970. 18P. DEP. CFSTI

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ORBIT PARAMETER, CYCLOTRON, MAGNETIC FIELD MEASUREMENT, BETATRON, OSCILLATION/(U)BESM DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0165 STEP NO--UR/0000/70/000/000/0018/0018

CIRC ACCESSION NO--AT0127789

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0127789

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCHEME OF THE CALCULATION OF THE ORBIT PARAMETERS AND PHASE GRAPHS, ADOPTED BY PROCESSING THE DATA OF THE MAGNETIC FIELD MEASUREMENTS OF THE 2 METRE ISOCHRONOUS CYCLOTRON, IS DESCRIBED. THE RESULTS OF THIS CALCULATION PERFORMED BY USE OF THE BESM 4 COMPUTER ARE PRESENTED. IT IS SHOWN THAT THE VALUES OF THE NU SUBR, NU SUBZ BETATRON OSCILLATION FREQUENCES, OBTAINED ACCORDING TO THE APPROXIMATE ANALYTICAL FORMULAE, AGREE WELL WITH THE RESULTS OF NUMERICAL INTEGRATION. FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

UNCLASSIFIED

USSR

UDC 621.438(088.8)

KLENIN, YU. P. and TIKHONOV, N. T., Kuybyshev Aviation Institute

"Unit for Testing Turbine Machines"

USSR Author's Certificate No 334502, filed 16 Sept 69, published 6 Oct 1972 (from RZh-34. Aviatsionnyye i Raketnyye Dvigateli, No 4, Apr 73, Abstract No 4.34.90 P)

Translation: A unit is patented for testing turbine machines, for example microturbines containing a brake in the form of an air supercharger and a moment measuring unit. In order to increase reliability, the supercharger is placed in a housing which is hooked up to the moment measuring unit with air inlet and outlet branch pipes in an axial direction. The unit differs from others in that the brake shaft is set in bearings with gas lubrication. Original article: 3 illus. Resume.

1/1

USSR

UDC 621.438:536

KLENIN, YU. P., NATALEVICH, A. S., TIKHONOV, N. T.

"Comparison of the Characteristics of Radial and Radial-Axial Centripetal Microturbines"

Tr. Kuybyshev aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 366-377 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.73)

Translation: Problems of determining the regions of the regime parameters $(\pi\ U_1/\Sigma_{C_{ad}}, \rho)$ in which the application of radial or radial-axial microturbines is economically feasible are discussed. It is shown that the basic criterion for comparing the economy of these microturbines is the ratio of the power at the periphery of the wheel to the flow of gas Nu/G. Computational relationships were obtained in relative parameters for analyzing the effect of regime parameters on the basic geometric relationships of the turbines and establishing the regions for their suitable application. 6 ill., 1 ref. Resume.

KLENITSKIY, B. M.

1. Report No. NASA TT F-776	2. Government Accession No.
3. Recipient's Catalog No.	
4. Title and Subtitle PLOTTING, ADJUSTMENT AND ESTIMATION OF THE ACCURACY OF SPACE GEODETIC NETWORKS	5. Report Date May 1973
7. Author(s) Ye. G. Bovko, B. M. Klenitskiy, I. M. Lesnika and G. A. Ostroy	6. Performing Organization Code
9. Performing Organization Name and Address SCITRAN, P.O. BOX 5456 Santa Barbara, California 93108	8. Performing Organization Report No.
12. Sponsoring Agency Name and Address NATIONAL AERONAUTICS AND SPACE ADMINISTRATION WASHINGTON, D.C. 20546	10. Work Unit No.
15. Supplementary Notes Translation of: "Postroyeniya, uravnivaniye i otsenka tochnosti kosmicheskikh geodezicheskikh setey," Moscow, "Nedra" Press, 1972, pp 1-208	11. Contract or Grant No. NASw-2483
	13. Type of Report and Period Covered Translation
	14. Sponsoring Agency Code

16. Abstract

The problems of designing, mathematically processing, and determining the accuracy of three-dimensional geodetic nets compiled from asynchronous observations of artificial earth satellites are examined. The first part gives a brief historical information, and the second part describes the main methods of space triangulation from photographic, laser, and doppler measurements. The third part discusses the apriori determination of the accuracy of elementary figures, series, and continuous nets of space triangulation.

17. Key Words (Selected by Author(s))	18. Distribution Statement Unclassified - Unlimited		
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 315	22. Price* $6.00

* For sale by the National Technical Information Service, Springfield, Virginia 22151

AA0043340

KLENOV E.M.
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1-70

240743 MULTIVIBRATOR can be used in oscilloscopes and delay devices. Initially the transistor (1) is saturated, the transistor (2) is shut and the transistor (3) is conducting while the capacitor (4) is charged. A triggering pulse opens transistor (2) and shuts (1) and (3). The capacitor (4) does not discharge until the end of the triggering pulse. Then transistor (1) opens and capacitor (4) discharges. A further process is of the multivibrator type. The output pulse is lengthened.

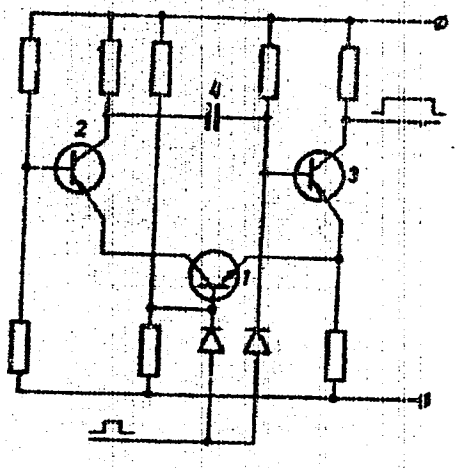
29.12.67 as 1207221/26-9. E.M. KLENOV (14.8.69) Bul 13/14.1969. Class 21a1. Int.Cl. H 03 k.

1/2

21

19761571

AA0043340



2/2

19761572

USSR UDC 541.1:538.22:546.73.4

ANASTASYUK, N. V., KLENOV, E. M., OLEYNIKOV, N. N., and TRET'YAKOV, YU. D., Department of Chemistry, Moscow State University imeni M. V. Lomonosov

"Properties of Nickel-Cobalt Ferrites with a Different Chemical Prehistory"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye materialy, Vol 8, No 1, 1972, pp 198-199

Abstract: The objective of the study was to determine the extent to which sintering conditions can eliminate the distinctions related to the chemical prehistory of ferrite powders and the extent to which sintering conditions would compensate for the inhomogeneity and low activity of ceramic specimens compared to schoenite specimens. Involved in the experiment were specimens of $Ni_{1-x}Co_xFe_2O_4$ ($x = 0.0; 0.2; 0.4; 0.6; 0.8; 1.0$). Regardless of the x value in the formula $Ni_{1-x}Co_xFe_2O_4$, the optimal sintering temperature for the schoenite specimens was determined to be 1270°C and for ceramic specimens 1350°C. The mean crystallite size was slightly smaller in the ceramic specimens as compared to that in the schoenite specimens (5.5 ± 0.3 and 6 ± 0.3 μ, respectively). A major factor here is that the state of magnetostriction saturation is attained in much lower fields in schoenite materials than in ceramic materials. This is obviously related to the different degree of

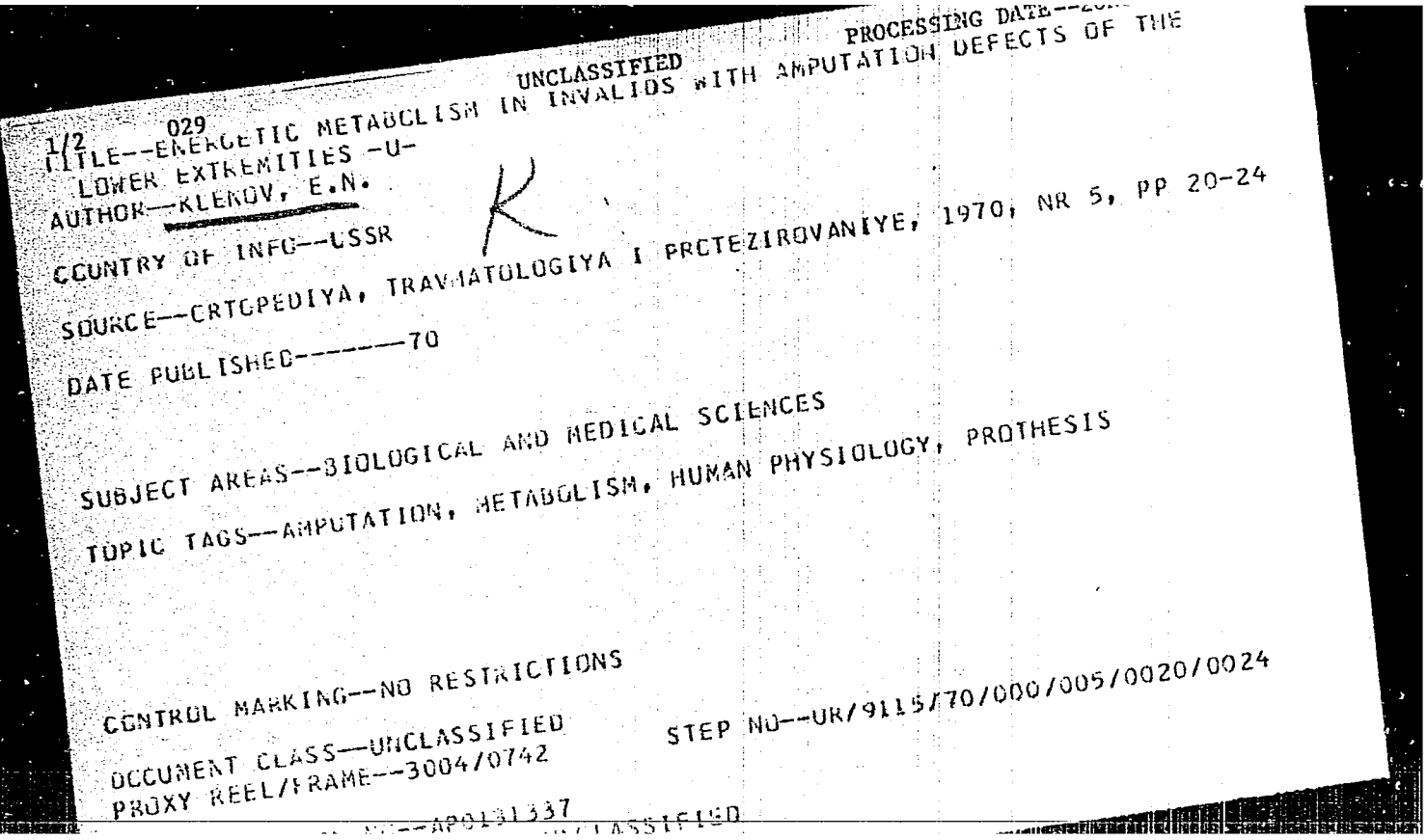
1/2

USSR

ANASTASYUK, N. V., et al., Neorganicheskiye materialy, Vol 8, No 1, 1972, pp 198-199

chemical inhomogeneity and density, which indicates that distinctions due to the chemical prehistory of the powders cannot be completely eliminated by adjustments in sintering conditions. (Two illustrations, 1 bibliographic reference).

2/2



UNCLASSIFIED PROCESSING DATE--

1/2 029

TITLE--ENERGETIC METABOLISM IN INVALIDS WITH AMPUTATION DEFECTS OF THE LOWER EXTREMITIES -U-

AUTHOR--KLEKOV, E.N.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 5, PP 20-24

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMPUTATION, METABOLISM, HUMAN PHYSIOLOGY, PROTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/9115/70/000/005/0020/0024

PROXY REEL/FRAME--3004/0742

--AP0131337 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 029

CIRC ACCESSION NO--AP0131337

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERDEPENDENCE OF INTENSITIVITY OF ENERGETIC METABOLISM ON THE RATE OF LOCOMOTION AND LEVEL OF AMPUTATION DEFECT IN AMPUTEES WITH STUMPS OF LEG, HIP AND BOTH HIPS IN COMPARISON WITH NORMAL SUBJECTS IN SHOWN IN THE ARTICLE. STUDY OF ENERGETIC METABOLISM WAS CARRIED OUT WITH AID OF INDIRECT CALORIMETRY WHICH PERMITS TO OBTAIN RELIABLE AND HIGHLY PRECISE EXPERIMENTAL DATA PERMITTING OBJECTIVE EVALUATION OF THE FUNCTIONAL PROPERTIES OF PROSTHESES OF VARIOUS SYSTEMS AND CONSTRUCTIONS. THE LEVEL OF ENERGY EXPENDITURE IN AMPUTEES OF VARIOUS GROUPS DURING WALKING ON CRUTCHES, PLASTER AND PERMANENT PROSTHESES HAS BEEN CONSIDERED. EVIDENCE SHOWS THAT TRAINING AND PRACTICE TEND TO MARKEDLY DECREASE THE TOTAL LEVEL OF ENERGY EXPENDITURE IN ALL TYPES OF LOCOMOTION AND ESPECIALLY DURING WALKING ON PERMANENT PROSTHESES. FACILITY: LENINGRAD. INSTITUTA PROTEZIROVANIYA.

UNCLASSIFIED

UDC: 621.374.33

USSR

VRONSKIY, I. V., KLENOV, V. T.

"A Transistor Switch With Zero Residual Voltage"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 191-194 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G269)

Translation: The authors discuss the circuit of a switch with zero residual voltage. The circuit does not require transistor selection since the value of an adjustable resistor is set during alignment. This makes the circuit highly practical. The circuit can be extensively used as a high-quality switch for reference voltages. In addition, it can be used as a modulator as well. In this case, the circuit gives lower residual resistances than the widely used compensated switch circuit. Resumé.

1/1

USSR

DREZYIN, R. S., VYSHNEVETSKAYA, L. O., BAGDAMYAN, YE. YE., YANKEVICH, O. D., TARASOVA, L. B., and KLENOVA, A. V., Institute of Virology Virusologii, No 6, Nov/Dec 71, pp 670-676

Abstract: Cotton rats aged 1½-2 weeks were experimentally infected with the Long strain of RS virus through intranasal inoculation, and the progress of the disease was investigated with three methods, yielding corresponding results. The virus and the specific antigen (anti-RS FITC-globulin of rabbits) were detected 24 hours after inoculation. The intensity of fluorescence, the precentage of cells containing the antigen, and the virus titer in the epithelium of the nose, trachea, bronchi, and alveoli reached a maximum in 3 to 5 days, at which time maximum pathomorphological changes were also observed in the epithelium of the trachea, bronchi, and bronchioles. The intensity of the infectious process declined on the 7th day, and neither the specific antigen, nor the virus, nor the pathomorphological changes in the epithelium of the respiratory pathways were found on the 14th day.

1/1

USSR

KIEGOPOV, I. F.; KUGUSHEV, G. I. (Institute of Theoretical and Experimental Physics, Moscow)

"Formation of Complex Magnetic Cycles in a 7-BEV Proton Synchrotron"

Moscow, Pribory i Tekhnika Eksperimenta; January-February, 1971; 19-24

ABSTRACT: The principles of developing general-purpose control systems for ignitron rectifiers are described. The systems are designed for the alternate formation of basic magnetic cycles with one or two continuous shifts from positive values of the derivative of the field dH/dt = 4 - 9 koe/sec to any given value other than zero (for slow direction of the beam on the target) as well as of shortened triangular cycles for producing a proton beam with an energy of approximately 200 Mev in the intervals between the basic cycles. The process of forming such cycles in supplying power to the annular magnet in the 30-cycle/minute mode is indicated.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE-- 090CT70

TITLE--THE PRODUCTION OF ALL WELDED SCREEN PANELS (FROM THE EXPERIENCE OF THE BELGOROD BOILER PLANT -U-

AUTHOR-(03)-BANSHCHIK, V.G., BELAVIN, V.A., KLEPACH, A.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 69-70

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STEAM BOILER, COAL, WELDING, INDUSTRIAL PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0893 STEP NO--UR/0122/70/000/002/0069/0070

CIRC ACCESSION NO--AP0113734
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0113734

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT THE BELGOROD BOILER PLANT, A SERIES OF STANDARDIZED COAL DUST BOILER UNITS, DESIGNED FOR OPERATION WITH SUPERCHARCHING AT A PRESSURE OF 300 MM OF WATER COLUMN, HAS BEEN DESIGNED. USED IN SUCH A BOILER UNIT IS A STRUCTURE FOR PROTECTING THE HEATING SURFACES IN THE COMBUSTION CHAMBER, WHICH CONSISTS OF ALL WELDED GAS IMPERMEABLE SCREENING WALLS FORMED BY A WELDED MEMBRANE PANEL MADE UP ON STANDARD ELEMENTS. THE CONSIDERATIONS INVOLVED IN DESIGNING AND PRODUCING THIS UNIT ARE SET FORTH IN THE ARITCLE. AT PRESENT THE STATE SPECIAL DESIGN OFFICE "ENERGOMASH" IS DESIGNING A MECHANIZED FLOW LINE FOR THE PRODUCTION OF GAS IMPERMEABLE SCREEN PANELS FOR THE BELGOROD BOILER PLANT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330009-1"

USSR

UDC 669.715'3'721:620.186:539.4

GALATSKIY, B. D., VAYNBLAT, Yu. M., PESHUKOV, K. G., KLEPACHEVSKAYA, S. Yu., SAGALOVA, T. B., and FEDOROVA, K. A.

"Dependence of Texture and Mechanical Properties on Shape Factor and Degree of Deformation of Extruded Aluminum-Alloy Products"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology of Light Alloys. Scientific and Technical Bulletin of the All-Union Institute of Light Alloys), 1970, No 3, pp 28-35 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1757 by E. KADANER)

Translation: An investigation was conducted on alloy D16 produced under industrial conditions by the semicontinuous casting method with subsequent extrusion under various regimes. With an increase in the shape factor of extruded products, uniform variation of deformation texture from biaxial ⟨111⟩, ⟨100⟩orientation to rolling texture takes place with predominant {110} ⟨112⟩ orientation. With an increase in shape factor, strength anisotropy decreases. With the same degree of deformation and shape factor, ultimate strength and its anisotropy are independent of the size of the section of the product. Five illustrations. Three tables. Bibliography of seven titles.

1/1

USSR

BAR'YAKHTAR, V. G., KLEPIKOV, V. F., and SOBOLEV, V. L. (Khar'kov State University)

"Ground States and Nuclear Magnetic Resonance in Thin Magnetically Ordered Films"

Leningrad, Fizika Tverdogo Tela, May 1971, pp 1454-1462

Abstract: The ground state of a thin magnetically ordered film in which the character of the surface magnetic anisotropy is different from the character of the voluminal magnetic anisotropy was studied. The distributions of the magnetic intensity of a ferromagnetic film as well as the vectors of the antiferromagnetism and magnetic intensity of an antiferromagnetic film in the ground state was determined. These distributions are described by Jacobian elliptic functions. The static local and integral magnetic susceptibility of a film were calculated, and it was shown that for given thicknesses of the film a phase magnetic transition of the second kind occurs, during which the components of the tensor of magnetic susceptibility undergo an abrupt change. The amplification factors of the nuclear magnetic resonance were calculated.

1/1

USSR UDC: 621.333.51

VASIL'YEV, V. V., KLEPIKOVA, A. N., CHAPLYGIN, V. L., Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR

"A Device for Simulating a Linear Programming Problem"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289422, division G, filed 7 Jan 70, published 8 Dec 70, p 163

Translation: This Author's Certificate introduces a device for simulating a linear programming problem. The device contains a reversible adder and a limiter-diode box which are interconnected. As a distinguishing feature of the patent, the operational process is simplified by adding a target function module. Connected to the inputs of this module are a discrepancy indicator and a unit which indicates linear operation of amplifiers. The output of the target function module is connected to the input of the reversible adder, and the inputs of the discrepancy indicator and the unit which indicates linear operation of amplifiers are connected to the outputs of a reversible linear converter and the linear adder.

1/1

USSR

UDC 543.27:[546.264-31+546.21

KLEPTSOVA, A. P., and GAZIYEV, G. A., Institute of Biophysics, Ministry of Health USSR

"Preparation of Calibrated Mixtures of Carbon Monoxide and Oxygen in a Cylinder"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 69-71

Abstract: A technique is described for preparing under pressure calibrated mixtures of oxygen and carbon monoxide in 40-liter cylinders used to transport oxygen for medical purposes. A gas pipet filled with pure carbon monoxide is attached to a cylinder containing oxygen under slight excess pressure (about 0.1 atm). A cushion with oxygen is attached to the free end of the gas pipet. When the cock of the pipet is opened, carbon monoxide is borne into the cylinder with the flow of oxygen. A cylinder of the same size containing pure oxygen is connected to the cylinder with the mixture. When the cocks of both cylinders are opened, oxygen flows into the cylinder with the mixture. The pressure in this cylinder rises to 75 atm. The concentration of carbon monoxide in the cylinder with oxygen remains unchanged for several months despite a decrease in pressure of the gas mixture. The proposed technique is useful in toxicological experiments and to check on the operation of gas analyzers

1/1

USSR UDC 669.715'5'721:620.193.4

KAREVA, A. P., KLEPTSOVA, I. S., LYUTOVA, I. S. , RYAZHSKAYA, T. K.

"Study of the Relation between the State of the Alloy of the Al-Zn-Mg System, Its Electrochemical Potential, and the Corrosion Resistance of the Intermediate Products"

V sb, Metallovedeniye (Physical Metallurgy -- collection of works) Sudostroyeniye Press, 1971, pp 133-136 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I679)

Translation: A study was made of the results of comparative studies of the electrochemical potentials of the alloy of the Al-Zn-Mg system in different states. The dependence of the potential on the heating temperature for quenching, annealing, and welding was established. The results of studying the variation of the electrochemical potential during the process of aging the alloys are confirmed by corrosion testing at the laboratory and under natural conditions. Recommendations are made with respect to selecting the heat treatment conditions of the alloy for which corrosion decreases in the weld-affected zone. Two illustrations.

1/1

USSR UDC 669.715.5.721.018.29.620.193

BABICHEV, B. I., ZOLOTOREVSKIY, Yu. S., KLEPTSOVA, I. S., NEZHNIKOVSKIY, I. A., RYAZHSKAYA, E. K.

"Properties of Alloys in the System Al-Zn-Mg as Functions of Artificial Aging Mode"

Metallovedeniye [Metal Science -- Collection of Works], No. 14, Leningrad, Sudostroyeniye Press, 1970, pp. 145-150. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I677 by the authors).

Translation: The properties of alloys in the system Al-Zn-Mg are studied with various aging modes. It is demonstrated that the alloy has satisfactory corrosion resistance with long storage following hardening with subsequent 2-stage aging (temperature of stage II 140°). 4 figs; 3 tables; 3 biblio refs.

1/1

USSR

KLESHCHEV, A. A., Leningrad Shipbuilding Institute

"Energy Spectra of the Scattered Field of a Stationary Random Signal in the Sea"

Moscow, Akusticheskiy Zhurnal, Vol 18, No 3, pp 476-477

Abstract: The author considers a point source of a random stationary (in the broad sense) acoustic signal in an infinite nonrefracting medium with attenuation β. At a sufficiently great distance r from the source is a reflector (ideal or elastic). It is assumed that the energy spectrum of the source $F_x(\omega)$ is a predetermined constant equal to $2N_0$ ($\omega = 2\pi f$ is the circular frequency, f is the cyclic frequency). The energy spectrum $F_y(\omega)$ of the signal scattered by a body at the point of location of the source is found, and an attempt is made to determine how the characteristics of the reflector (material, size, shape) and its position (distance, orientation) relative to the source affect the energy spectrum $F_y(\omega)$. It is assumed that the parameters of the medium and the reflector are constant in time. Results are given for ideal spheroids.

1/1

USSR UDC 8.74

KLESHCHEV, A. S.

"INF Compiler for the Dnepr-21 Computer"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 197-204 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V480)

Translation: The compiler from the INF programming language developed for the Dnepr-21 computer is described. INF is a high level language designed for programming a broad class of scientific problems: computational, logical, symbolic transformations, data processing, operations with lists, structures, and so on. The general structure of the compiler and the service possibilities which it offers are presented, and the experience in maintaining and operating it is analyzed. The INF-compiler provides a number of service possibilities: a) the possibility of creating and updating the problem library on magnetic tapes; b) the possibility of calling the problem for solution both from an exchange carrier and from the problem library; c) output of the information on syntactic and semantic errors in literal form; d) possibility of introducing changes in the problem texts and the initial data and outputting the corrected texts to an external carrier or replacing the texts in the problem library; e)

USSR

KLESHCHEV, A. S., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 197-204

possibility of writing the translated program on magnetic tape or direct transfer to calculations; f) output of the texts of the translated procedures in library form to an external carrier for subsequent inclusion in the procedure library; g) possibility of updating and changing the library of general use procedures; h) possibility of using individual procedure library; i) introduction of supplements and changes into the translator; j) automated recording of using machine time; k) possibility of printing out the program texts in two copies with sharing on a page by the standard typewritten list format.

2/2

USSR

UDC 669.715:539.26

KLESHCHEV, G. V., TOLDIN, V. A., SHEYNKMAN, A. I., RASPOPOV, Yu. G., SHUMILOV, D. V., and TROFIMOV, V. G., Chelyabinsk Pedagogical Institute

"X-Ray and Electron-Microscopic Investigation of the Decay of Supersaturated Solid Solution in AlZn Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 762-767

Abstract: A study was made of the decay of the supersaturated solid solution in AlZn alloys with 40, 50, and 60 wt. % zinc using the X-ray and electron-microscopic methods. The process of decay at tempering temperatures above 200 (but below 275°) depends on the rate of quenching of the specimen from the homogenizing temperature to the tempering temperature. During slow quenching a metastable α'-phase develops, while during fast quenching a stable α-phase develops. The possible reasons for such a dependence are considered. The role of the effect of foil thickness is noted.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PYRAMIDS OF GROWTH OF THE HEXAGONAL PRISM FACES IN QUARTZ CRYSTALS -U-

AUTHOR--BRYZGALOV, A.N., KLESHCHEV, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZAP. VSES. MINERAL. OBSHCHEST. 1970, 99(1), 106-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--QUARTZ, CRYSTAL LATTICE STRUCTURE, ETCHED CRYSTAL, GRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1070 STEP NO--UR/0000/70/099/001/0106/0109

CIRC ACCESSION NO--AP0105930

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105930

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERNAL STRUCTURE OF QUARTZ CRYSTALS WAS STUDIED BY THE HYDROTHERMAL ETCHING METHOD DESCRIBED BY SHMID (1965) AND K., ET AL. (1968). NATURAL QUARTZ CRYSTALS HAD WELL FORMED FACES OF HEXAGONAL PRISM M. THE HYDROTHERMAL ETCHING OF THIN PLATES OF THESE CRYSTALS REVEALED DISTINCTLY THE LAYERS OF GROWTH. THE TYPICAL ZONAL STRUCTURE WAS DETECTED: THE LAYERS ARE PARALLEL TO THE RHOMBOHEDRAL FACES IN SUSPECTED PYRAMIDS OF GROWTH ON HEXAGONAL PRISM M. THE NATURAL CRYSTALS DID NOT GROW ON THE FACES OF PRISM M. THE CRYSTALS GREW ALONG THE RHOMBOHEDRAL FACES WITH FORMATION OF FACES M AND EXTENSION OF FACES IN TANGENTIAL DIRECTION. THE SYNTHETIC QUARTZ, GROWN FROM THE PRIMER LAMINAS OF THE (0001) SECTION, DEVELOPED ALONG THE PINACOID FACES. THE PYRAMIDS OF PINACOID GROWTHS WEDGED OUT AND FURTHER GROWTHS OF THE CRYSTAL OCCURRED ALONG THE RHOMBOHEDRAL FACES. THE FACES OF HEXAGONAL PRISM M WERE PASSIVE AND NO GROWTH ON THEM OCCURRED IN NATURAL OR SYNTHETIC CRYSTALS. THEIR FORMATION AND EXTENSION IN TANGENTIAL DIRECTION OCCURRED BY THE GROWTH ON FACES OF TRIGONAL PRISMS AND RHOMBODEDRONS. BUT THE FACES M CAN PLAY A LARGE ROLE IN FORMATION OF SECONDARY ZONING IN CRYSTALS.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THERMAL EFFECTS DURING THE HEATING OF SYNTHETIC QUARTZ CRYSTALS -U-

AUTHOR-(04)-GAVRILKO, V.M., KASHKUROV, K.F., KLESHCHEV, G.V., SAFRONOV, G.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 421-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--QUARTZ, CRYSTAL, NONMETALLIC INCLUSION, ENDOTHERMIC EFFECT, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0832 STEP NO--UR/0363/70/006/003/0421/0424

CIRC ACCESSION NO--AP0118008

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 018

CIRC ACCESSION NO--AP0118008

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYNTHETIC QUARTZ CRYSTALS WERE INVESTIGATED BY DTA. THE HEATING CURVES OF SYNTHETIC QUARTZ SAMPLES STUDIED SHOWED THE FOLLOWING THERMAL EFFECTS: ENDOTHERMAL EFFECT AT 530-570DEGREES, ASSOCD. WITH POLYMORPHIC TRANSFORMATION IN QUARTZ; ENDOTHERMAL EFFECT AT 100-190DEGREES, OBSD. FOR SAMPLES THAT CONTAIN INCLUSIONS OF THE COLLOIDAL PHASE; ENDOTHERMAL EFFECT AT 140-240DEGREES, ASSOCD. WITH MICROSCOPIC INCLUSIONS OF THE ORIGINAL SOLN. IN THE CRYSTAL; EXOTHERMAL EFFECT AT 200-410DEGREES, FOR WHICH THE MICROGLASSY INCLUSIONS IN THE CRYSTALS ARE PROBABLY RESPONSIBLE. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0126302

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION IN AL,ZN ALLOYS DURING THE DECOMPN. OF THE SUPERSATD. SOLID SOLN., OF SPHEROIDAL ZONES ENRICHED WITH ZN WAS STUDIED TO DET. WHETHER THESE ZONES ARE THE RESULT OF SPINODAL DECOMPN. TWO COMPETING PROCESSES WERE DETD. DURING THE DECOMPN. OF THE SUPERSATD. SOLID SOLNS.: THE FORMATION OF ZONES AND THE FORMATION OF A MODULATED STRUCTURE. ZONE FORMATION PROCEEDED WITH THE ACTIVE PARTICIPATION OF VACANCIES, AND THEREFORE IT IS ASSUMED THAT DURING THE EARLY STAGE OF DECOMPN. THE ZONE FORMATION CAN SUCCESSFULLY COMPETE WITH THE MODULATED STRUCTURE FORMATION. VACANCIES STIMULATED THE RAPID GROWTH OF ZONES AND SUBSEQUENT TRANSFORMATION OF THESE ZONES INTO CRYSTALLITES OF THE BETA PHASE. ZONE FORMATION CANNOT BE REGARDED AS THE REALIZATION OF SPINODAL DECOMPN, THE STUDY WAS CARRIED OUT WITH AN ELECTRON MICROSCOPE OF AN AL,ZN 40 WT. PERCENT ALLOY, WHEREBY THE SPECIMENS WERE HEATED DIRECTLY IN THE ELECTRON MICROSCOPE AND THE DECOMPN. WAS OBSD. AND STUDIED. FACILITY: CHELYABINSK. GOS. PEDAGOG. INST., CHELYABINSK, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USE OF AN OMEGATRON DURING A STUDY OF THE PHOTOLYSIS OF SOLID COMPOUNDS -U-

AUTHOR-(04)-ZAKHAROV, YU.A., KISLIN, G.A., KLESHINA, X.X., SINITSIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 532-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OMEGATRON, MASS SPECTROMETER, CHELATE COMPOUND, ELECTRIC LAMP, SODIUM COMPOUND, CHLORATE, NITRATE, LEAD COMPOUND/(U)RM04S LAMP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0889 STEP NO--UR/0076/70/044/002/0532/0533

CIRC ACCESSION NO--AP0137917

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITIES OF USING AN OMEGATRON MASS SPECTROMETER FOR DETG. THE COMPN. OF ULTRASMALL AMTS. OF PHOTOLYSIS PRODUCTS, THE SPECTRAL BOUNDARY, AND THE SPECTRAL SENSITIZATION OF THE PROCESS WERE STUDIED. THE CONNECTION OF THE OMEGATRON WITH OIL PUMPS PRODUCES UNSTABLE READINGS EVEN IN THE CASE OF USING TRAPS WITH LIQ. N. MORE EXACT RESULTS ARE OBTAINED WITH A REACTION CELL AND AN RMO 4S LAMP WITH A TI SORPTION PUMP USING AN INSULATION WITH THE AID OF IN,GA PLUGS. THE OMEGATRON CAN BE USED FOR STUDYING THE COMPN. AND DECOMPN. OF PHOTOCHEM. STABLE PRODUCTS LIKE METAL CHLORATES AND NITRATES. THE PRINCIPAL PRODUCT OF NACLO SUB3 DECOMPN. IS O. THE INCREASE IN THE FLUX OF IONS WITH THE MASS NOS. OF 44 AND 28 IS DUE TO AN INCREASE IN O CONCN. AND THE BURNING OF THE CATHODE OF THE RMO 4S LAMP. THE OMEGATRON IS USEFUL FOR DETG. THE SPECTRAL BOUNDARY OF THE BEGINNING OF PHOTOCHEM. DECOMPN. THAT TAKES PLACE AT AVERY LOW RATE. THE BOUNDARY OF PHOTOACTIVE LIGHT IS DETD. FOR PBN SUB6. THE OMEGATRON CAN ALSO BE USED FOR OBTAINING INFORMATION ON THE SPECTRAL AND CHEM. SENSITIZATION OF SOLID SALTS WITH THE AID OF DYES. FACILITY: TOMSK. POLITEKH. INST. IM. KIROVA, TOMSK, USSR.

UNCLASSIFIED

USSR

UDC: 669.18:66.011.56

TREYSTER, Yu. Ya., IZMAYLOV, G. A., KLESHKO, O. B., KRASNOV, B. I., PIROZHNIKOV, V. Ye., All-Union Scientific Research Institute of Automation of Ferrous Metallurgy

"New Developments in the Automation of Steel Smelting Production"

Moscow, Metallurg, No 6, 1973, pp 21-24

Abstract: This article deals with new processes for the automation of steel production in accordance with the statement of the Central Committee of the Communist Party that implementation of the complex automation of technological processes is one of the decisive factors in the successful fulfillment of technical-economic aims. The All-Union Scientific Research Institute of Automation of Ferrous Metallurgy (VNIIAchermet) has done much to automate converters, various installations for continuous pouring of steel, arc steel smelting ovens, and electroslag remelting. A dynamic system for controlling the converter process has been put into use in the Chelyabinsk Metallurgical Plant; the block diagram of the operating algorithm for this system is reproduced and explained. The demand for continuous pouring of steel is being satisfied by an automatic system of continuous pouring using an all-purpose computer for controlling the converter shop of the "Azovstal'" metallurgical

1/2

-USSR

TREYSTER, Yu. Ya., et al., Metallurg, No 6, 1973, pp 21-24

plant. This system was developed by VNIIAchermet in cooperation with the Ul'yanovsk State Pedagogical Institute "Metallurgavtomatika." The structural diagram for the system is also given. Other achievements in the field of automatic control of metallurgical production are cited and described.

2/2

UDC: 534-8

USSR

KLESHNEV, Yu. A., NIKITIN, V. I.

"A Method of Measuring the Coefficient of Electromechanical Coupling of Multiple-Element Converters of Ultrasonic Surface Waves"

Leningrad, Tr. Leningr. in-t aviats. priborostr. (Works. Leningrad Institute of Aviation Instrument Building), 1972, vyp. 76, pp 78-79 (from RZh-Fizika, No 5, May 73, abstract No 5Zh598 [résumé])

Translation: The coefficient of electromechanical coupling for multielement converters of ultrasonic surface waves may be experimentally determined by a method based on measuring the equivalent electrical parameters of the multielement converter. The coefficient of electromechanical coupling is easily calculated from the known active and reactive components of input conductance and the relative width of the frequency band of the converter. The experimentally found coefficient of electromechanical coupling for multiple-element converters with a quartz acoustic line is equal to 0.043, while that for converters with a lithium niobate acoustic line is equal to 0.2.

1/1

UDC: 621.374.55; 666.593.5

USSR

KLESHNEV, YU. A. and NIKITIN, V. I.

"A Method for Measuring the Coefficient of Electromechanical Coupling of Multi-Element Ultrasonic Surface Wave Converters"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation Instrument Building), Leningrad, 1972, vyp.76, pp 78-79 (from RZh-32. Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.469)

Translation: Experimentally, the coefficient of electromechanical coupling for multi-element ultrasonic surface wave converters can be determined by a method based on measuring the equivalent electric parameters of a multi-element converter. The coefficient of electromechanical coupling is easily calculated according to the known active and reactive component of the input conductivity and the relative frequency band width of the converter. The coefficient of electromechanical coupling is determined experimentally for multi-element converters with a quartz soundguide and is equal to 0.043, while it is 0.2 for converters with a soundguide made from lithium niobate. Original article: four bibliographic entries.

1/1

USSR

UDC: 621.382.2.002

KLETCHENKOV, I. I., Kiev Polytechnical Institute

"Microminiaturized Silicon Rectifier Stacks"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika. Resp. Mezhved. Sb., No 7, 1972, pp 121-122

Abstract: The paper describes a method developed by the author for making microminiature semiconductor stacks with silicon plates. The initial material is *n*-type silicon with a volumetric resistivity of 5 Ω·cm. A *p-n* junction was made by the conventional boron diffusion method at a depth of 40 μm in plates 150 μm thick. A layer with *p*-conductivity is removed from one side of the plate, and phosphorus is diffused to a depth of 8-10 μm to reduce the resistance of the base layer of the diode and the contact resistance of the lead. After removing surface oxides, contacts with the *p*-type and *n*-type regions are made by chemical nickel plating. The nickel layer is then brazed, nickel plating is repeated, and the plates are tinned. The tinned plates are formed into a stack by slight pressure in glycerin heated to the necessary temperature, after prearranging the plates so that conductivity regions alternate. The stack is potted in epoxy and cut per-

1/2

USSR

KLETCHENKOV, I. I., Poluprovodn. Tekh. i Mikroelektron. Resp. Mezhved. Sb., No 7, 1972, pp 121-122

pendicular to the silicon layers into plates which are then ground to a thickness of 0.3 mm. These plates are repotted in epoxy and cut in the transverse direction. The finished plates are also ground to 0.3 mm. Silicon stacks with a base area of 0.3×0.3 mm are extracted from the epoxy potting by formic acid treatment. The finishing operations of soldering leads and surface protection are done by conventional methods. The finished stacks weigh 0.2 g, have a volume of 0.65 mm^3, an inverse voltage of 2 kV, inverse current of 0.5 μA, forward voltage of 3.5 V, peak forward current of 20 μA and working frequency of up to 80 kHz.

2/2

USSR

UDC 621.382.002

KLETOCHNIKOV, I.I., TERENTOVA, G.V.

"Study Of The Adhesion Properties Of Negative Photoresist"

V sb. Vopr. mikroelektroniki (Problems Of Microelectronics--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 189-194 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B443)

Translation: Measurement of the adhesion of films of photoresist PVTs to an aluminum substrate was conducted by a method which forms the basis of the prevailing GOST 9554-60. Adhesion of the films in the interval of tanning temperatures of 100--160° C amounts to 1.0--1.5 gram-force/mm. A considerable increase of adhesion is begun at a temperature of 180° C and particularly at 200--220° C (6--15 gram-force/mm). This is explained by the removal of the solvent from the polymer and at higher temperatures (210--220° C) partial destruction of the molecules of PVTs. The optimum temperature of tanning is 220° C. With exposure of the specimens with the photoresist to a cold etchant of the composition 3 ml HNO_3 plus 1 ml HF for 5 min, the adhesion is decreased by two times. During a subsequent 9 min of exposure, the adhesion is not changed, after which, because of the disintegration of the molecules of PVTs, it reduces to zero. The alkali resistance and resistance to the buffer etchant > 30 min. 3 ill. 2 ref. I.M.

1/1

USSR

UDC 621.382.002

KLETCHENKOV, I.I., SKRIPOV, F.A., CHMERUK, A.N.

"Study Of The Protective Properties Of Organosilicon Compound"

V sb. Vopr. mikroelektroniki (Problems Of Microelectronics-Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 181-189 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B492)

Translation: The results are presented of a study of the electrical properties of an organosilicon compound based on Vaseline and of tests on the stability of the amplification factor β of a type P-416 transistor with protection by this compound. An evaluation of the effectiveness of the protection was conducted by a method developed at the Department of Dielectrics and Semiconductors of the Kiev Polytechnical Institute. It is shown that organosilicon Vaseline is a promising protective material because of the technological nature of the process of deposition at the p-n junction, the high electrical properties, and the hydrophobic nature. A mixture of it with zeolite does not entirely answer the requirements for high stability of the parameters of the semiconductors. Zeolite considerably impairs the electrical properties of the compound and increases the absorption of moisture. 5 ill. I.M.

1/1

USSR

UDC 621.382.002

KLETCHENKOV, I.I., TEREKHOVA, G.V.

"Adhesion Properties Of Positive Photoresist"

V sb. Vopr. mikroelektroniki (Problems Of Microelectronics--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 194-199 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B444)

Translation: An investigation of the adhesion of films of photoresist based on 1.2 naphthoquinonediazid--5--sulfoester novolak as a function of regimes of tanning, the conditions of treatment in acid, alkali, and buffer etchants and in water, was conducted with the aid of the EMA-57m adhesiometer in conformity with GOST 9564-60. With an increase of the temperature of tanning, the magnitude is decreased, probably because of shrinkage of the films and an increase of their brittleness as a consequence of removal of the solvent and semi-condensation of the polymer. With a temperature of tanning of 100° C a fixed magnitude of adhesion equal to $\sim$ 1 gram-force.mm^{-1} is determined for 25--30 min. In a cold acid etchant, the adhesion of the films reduces to zero with exposure during 16--17 min, and in alkali during 1 min. Adhesion of the films with exposure during 30 min to HNO_3 and buffer etchant changes immaterially. 2 ill. 3 ref. I.M.

1/1